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15 JUN 1965

MEMORANDUM FOR: Executive Director - Comptroller

THROUGH : Deputy Director for Science and Technology
FPBC

SUBJECT : Action Memorandum A-444; ADP in CIA

Transmitted herewith is a report prepared in response to your
Action Memorandum A-444. Committee members included:

DD/S -
DD/P -
DD/I -
DD/S&T -
OBPAM -



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The DD/S&T member did not concur in the Committee's report.
His statement of dissent is attached.

For the record, the Committee met 12 times, visited NPIC, RID,
OCS, and were briefed on those operations.

I wish to commend each and every Committee member for the
positive way he approached the discussions. Despite honest differences
of opinion, the forum provided an excellent base for improving mutual
understanding and clarifying the basic ADP issues which face the Agency.



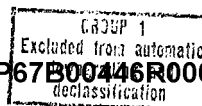
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JOSEPH BECKER
Chairman
ADP Committee

cc: All Members ADP Committee
DD/S&T
FPBC

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A REPORT ON AUTOMATIC DATA PROCESSING IN CIA

Prepared in response to Action Memorandum No. A-444, dated 26 March 1965

Prepared by the CIA ADP Committee
15 June 1965

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I. DEFINITION AND SCOPE OF ADP

A. Government-Wide Terms of Reference:

The Executive Office of the President has furnished a definition of the term automatic data processing and identified the scope of automatic data processing activities in terms of equipment involved:

1. The Automatic Data Processing Glossary, provided by the Bureau of the Budget in December 1962, defines ADP: "data processing performed by a system of electronic or electrical machines so interconnected and interacting as to reduce to a minimum the need for human assistance or intervention."
2. Bureau of the Budget Circular A-54 dated 14 October 1961 (referenced in BOB Circular A-71, 6 March 1965) states that ADP Equipment (ADPE) affected by the policies stated therein includes:
 - a. "Electronic digital computers, irrespective of use, size, capacity, or price;
 - b. "All peripheral or auxiliary equipment used in support of electronic computers, whether or not cable-connected and whether selected and acquired with the computer or separately;
 - c. "Punched-card equipment, whether used in conjunction with or independent of an electronic computer; and

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- d. "Data transmission or communications equipment that is selected and acquired solely or primarily for use with a configuration of ADP equipment which includes an electronic computer.

"Analog computers are covered only when computers of this type are being used as equipment peripheral to a digital computer."

"Items of ADP Equipment that are (a) physically incorporated in a weapon, or (b) manufactured for the Government under a developmental contract, are not affected by the policies stated /therein/."

B. CIA Definition and Scope of ADP:

1. The ADP Committee accepted and expanded the broad definition of ADP which is given in A 1, above.
2. The Committee agreed that, for the purpose of this study and foreseeable planning, the definition of ADP and scope of ADPE given in A, above, be expanded to include microfilm-based document retrieval systems such as aperture cards and Minicard, the use of special hardware such as the WALNUT film handling devices and Automatic Language Processing (ALP) equipment, automatic communications switching control systems, and analog/digital data processing equipment.

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3. Present ADP activities in CIA cover a very broad range of applications. These include extremely large document control and information retrieval systems, many types of intelligence data manipulation, statistical analysis, communications support, security records handling, the broad range of administrative data management, and the most advanced mathematical and scientific computing. It is obvious that the initial achievements the Agency has already realized through automatic data processing are but stepping stones to the future and that the range and extent of ADP activities will be greatly increased.

II. GOVERNMENT POLICY ON ADP

A. The Clewlow Report:

1. In a letter to the leaders of Congress, dated March 2, 1965, the President endorsed the suggestions for improvement in governmental ADP activities which are contained in the February 1965 REPORT TO THE PRESIDENT ON THE MANAGEMENT OF AUTOMATIC DATA PROCESSING IN THE FEDERAL GOVERNMENT (Clewlow Report).
2. The Clewlow Report identified some of the major ADP management problems:
 - a. Diversity of ADP equipment and its use under varying circumstances.
 - b. Great range of computer applications.
 - c. The tremendous effect of system design.
 - d. Coordination of research efforts.
 - e. Contractor use of computers.
 - f. Effect of computers on Federal employment.
 - g. Selection of equipment.
 - h. High cost of computers.
 - i. Contracting for computers.
 - j. Rental vs. purchase.
 - k. Disposal of excess equipment.
 1. Equipment maintenance.

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- m. Data interchange.
 - n. Assignment of appropriate roles to the echelons of management.
3. This Government Report outlined actions which should be undertaken by BOB, GSA, etc., to provide for better Government-wide and intra-agency ADP management, such as:
- a. The establishment of an ADP equipment classification system.
 - b. The development of criteria for evaluating the effectiveness of ADP systems.
 - c. The development of master data processing plans at appropriate agency levels.
 - d. The development and application of ADP cost principles.

B. Executive Directives:

1. Over the past five years numerous letters, bulletin, circulars, etc., which relate to ADP management and activities, have been sent to the heads of executive departments and establishments. (The Clewlow Report explains some of the difficulties in applying these guidelines and directives to particular ADP requirements.)
2. BOB Circular A-71 was issued in March 1965, following the Clewlow Report, to set forth specific Government-wide ADP responsibilities of the Bureau of the Budget, General Services

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Administration, Department of Commerce, Civil Service Commission, and the ADP responsibilities of the heads of executive agencies.

At the same time, the Director of the Bureau of the Budget reminded agency heads of the Government ADP policies and guidelines set forth in the following:

- a. BOB 60-6: Studies preceding the acquisition of ADP equipment (March 18, 1960).
- b. BOB A-54: Policies on selection and acquisition of automatic data processing equipment (October 14, 1961).
- c. BOB A-61: Guidelines for appraising agency practices in the management of automatic data processing equipment in Federal agencies (August 3, 1963).
- d. BOB A-55: Annual reports on the utilization of automatic data processing equipment (November 15, 1963).
- e. BOB 64-9: Establishment of an Experimental Computer Sharing Exchange and Computer Service Center at the National Bureau of Standards (January 2, 1964).
- f. Department of Commerce (NBS) letter: Plans for Operation of Experimental Computer Sharing Exchange and Computer Service Center (January 17, 1964).
- g. GSA Reg. 36: Utilization Screening of Government-owned and -leased Electronic Data Processing Equipment (April 17, 1964).
- h. BOB A-27: Policies and responsibilities on the sharing of electronic computer time and services (June 15, 1964).
- i. GSA Temporary Reg. A-1: Government-wide automatic data processing sharing program (November 27, 1964).

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C. Proposed Legislation:

1. HR 4845 (Brooks Bill) and S. 1584, 89th Congress, 1st Session, have been introduced "To provide for the economic and efficient purchase, lease, maintenance, operation, and utilization of automatic data processing equipment by Federal departments and agencies." Both bills provide a basis for the Agency to obtain an exemption from their scope on the basis of administrative action.
2. The basic objectives of the proposed legislation have been endorsed by the Agency. However, a letter from the DDCI to the Chairman, Committee on Government Operations, House of Representatives, dated 8 April 1965, pointed out that existing legislation provides "... That the Director of Central Intelligence shall be responsible for protecting intelligence sources and methods from unauthorized disclosure;...."and requested statutory exemption for the Agency.
3. It is expected that legislation will be enacted to establish clearly Government-wide and intra-Agency responsibilities and authority in the field of automatic data processing. Meanwhile, this Agency is engaged in clarifying its own ADP structure and strengthening ADP management.

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4. Hearings on S. 1584 have not yet been held in the Senate. Hearings on HR 4845 have been concluded in the House and are to be published soon. The Committee Report on HR 4845 is still being assembled, and while it is not contemplated that the Committee will accede to the Agency's request for a statutory exemption, it is expected that the Report will acknowledge our unique problems and indicate that the Agency clearly falls within the purview of the administrative exemption provision in the bill.

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III. ADP DEVELOPMENTS IN CIA

A. Punched Card Data Processing:

Punched card data processing and information systems have a significant role in CIA's history. The Intellofax System (DD/I-OCR) for library document retrieval was one of the first (1947) major ADP operations of its kind. In Fiscal Year 1959 there were fourteen punched card units in the Agency.

<u>Unit</u>	<u>Principal Function</u>
MRD (Compt.)	Payroll and finance
OCR/MD	Document control
OCR/IR	Document control
OCR/BR	Document control
OCR/SR	Document control
OCR/RSB	Document control
NPIC	Report generation
RID	Document control
<div data-bbox="526 1184 685 1230" style="border: 1px solid black; width: 80px; height: 20px;"></div>	Document control
FE	Document control
OO/C	Management data processing
OTR	Statistics
OS	Statistics
OC	Statistics

B. Introduction of Computers:

September 1957: The first computer was installed in the Agency.

This was an ALWAC III, installed at NPIC for scientific computing.

October 1959: The first general purpose computer was installed.

This was an IBM 650 RAMAC installed in RID, an initial phase in WALNUT.

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October 1960: The RCA 501 computer was installed by the Comptroller to phase out the centralized punched card installation which served the Support components of the Agency.

June 1961: An IBM 1401 was installed in RID to perform additional functions.

October 1961: A Bendix G-15 computer was installed in OC/E for work on special engineering problems. This computer was purchased and is still on hand.

February 1962: An IBM 1410 with a disk unit was installed to replace the IBM 650 in RID for WALNUT operations.

July 1962: An IBM 1401 was installed at NPIC for report generation.

November 1962: An RCA 301 was installed to provide input/output support to the RCA 501.

January 1963: A Computer Center was established by the DD/S (ADP Staff)--a service center for all Directorates. The two computers initially installed were IBM 1401 and IBM 1410.

February 1963: The UNIVAC 490 was installed at NPIC to provide on line support to analysts.

July 1963: The IBM 7090 was installed in the ADPS Computer Center to perform scientific computing for OSA and provide the Agency's first large-scale scientific computing capability.

November 1963: Two UNIVAC 1004's were acquired by OSA to provide data link facilities.

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February 1964: An SDS 920 was installed in a compartmented section of the OCS (formerly ADPS) Computer Center for FI/D.

July 1964: A second IBM 1410 was installed in RID to replace the 1401.

October 1964: Collins Max I was installed overseas by COMMO.

December 1964: A third UNIVAC 1004 was acquired for the OSA data link.

December 1964: An SDS 910 was acquired for special operations in OEL.

January 1965: A second SDS 910 was installed in OEL.

C. Development of ADP Organizations:

1. There were numerous punched card data processing organizations in the Agency during the period 1947-1957, before the first computer was installed. The largest of these punched card organizations were in the DD/I (OCR).
2. The DD/P System Group was the first ADP staff established (about 1956) at the Directorate level--to develop Project WALNUT.
3. In 1958 the Automation Development Group was established in the DD/I, OCR. This staff was concerned primarily with the testing and implementation of the Minicard system.
4. Notice No. 7-200-2 (25 June 1959) announced the establishment of an Automatic Data Processing Committee "...to provide Agency-wide guidance and authoritative screening for all aspects of data processing requirements and equipment. ..."

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5. In 1959 the DD/I Automation Staff was formed. This elevated computer planning to the Directorate level in the DD/I.
6. By September 1961 OCR consolidations resulted in a reduction from five punched-card organizations to two.
7. In 1961 Agency management created the CIA ADP Staff. This new Staff, with Agency-wide responsibilities, absorbed the DD/I Automation Staff slots and personnel, and the DD/S contributed additional slots from the former CIA Management Staff.
8. In July 1963 the ADP Committee considered alternative plans for organizing ADP resources in the Agency. Failing to reach an agreement, this committee became inactive.
9. In August 1963 the ADP Staff was renamed the Office of Computer Services and assigned to the DD/S&T.
10. In November 1963 the Automatic Data Processing Division (ADPD) was transferred from the Comptroller to OCS and absorbed into the CIA Computer Center.
11. In April 1964 the DD/I announced the appointment of a DD/I CHIVE Officer to represent DD/I management interests in this joint OCS/OCR project.
12. In May 1964 Panel 375 was established pursuant to DCI Action Memorandum A-375. Its purpose was to develop "the best possible information handling system for CIA."

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13. In May 1964 the Information Processing Division, NPIC, was established to consolidate its two previous computer centers.
14. In September 1964 the DD/S designated a coordinator of electronic data processing activities in the Support Directorate.
15. In March 1965 the Support Information Requirements Group was established in the DD/S to develop an integrated management information processing system (MIS) to serve the Support Directorate and the Agency at large.

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IV. MEASURE OF CIA ADP ACTIVITIES

A. Fiscal Years 1960 and 1965:

1. It is difficult to measure and compare the level of personnel (and consequently dollars) as well as equipment attributable to ADP activities in the Agency over a period of several years. This is primarily because there have been no satisfactory measurement factors established in this rapidly developing field. Even though ADP equipment and personnel utilization figures have been assembled annually by this Agency since at least 1959, this exercise has lacked continuity in several respects. For example, at times various ADP activities have been compartmented, for security reasons, from the group assigned to enumerate the ADP inventory. In fact, to date Agency management has not officially authorized and charged anyone with this total task. Prior to 1965 only unclassified information was assembled in the annual ADP report to the Bureau of the Budget. Even then, each of the Agency's fifteen ADP units (eight with computers and seven with only punched card equipment) which were counted in that inventory, made its separate decision on who to include in its count of ADP personnel. Consequently some counted Flexowriter operators preparing data in the customers' offices and some did not, and there were many other discrepancies in the count.

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2. The Committee reviewed the figures that have been compiled over the past five years and agreed that the amounts stated below and shown in Figure 1 fairly represent the Agency's ADP dollar and personnel levels in 1960 and 1965.

3. In 1960 the Agency had two (2) small computers (ALWAC III and IBM 650). Total ADP costs for that year were figured to be roughly [redacted] and approximately

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[redacted] people were identified as being with the Agency's ADP activities. Most of these people were associated with punched card data processing operations. The principal functions performed by ADP in the Agency at that time were document control and administrative support.

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4. In 1965 the Agency has [redacted] computers [redacted]
[redacted] Total ADP costs for this year will

amount to about [redacted] The count of
Agency ADP personnel is roughly [redacted] Currently

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[redacted]
of the manpower relates to punched card activities. ADP now provides some support to almost every type of activity in the Agency. Emphasis has recently been placed on developing advanced

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mathematical and scientific computing capabilities. At the same time major new systems are being developed in the field of information retrieval and management support.

B. Fiscal Year 1970 - Projection:

1. The Committee was not able to come up with any scientific method for projecting the level of ADP activities in the Agency for the next five years. However, it recognized that it was probably in a better position than anyone else to make such an estimate for Agency management.
2. Undoubtedly, most punched card processing operations will be phased out by 1970. One major exception will be DD/I (OCR) information retrieval from existing punched card files which are prohibitively expensive to convert. Nearly all other functions now performed on punched card equipment will be handled on computers with fewer operators involved. However, this is probably the only factor by which the number of ADP personnel will be reduced during the next five years. Conversely, as computer hardware capabilities increase there follows a rapidly growing need for system designers, programmers, etc. This will be particularly true during the next five years with the advancement to third generation computers and the implementation of major ADP systems which are already under development in the Agency.

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3. Probably the greatest impact on the Agency work force, resulting from ADP, will be in the area of data analysis or manual indexing and other functions required to prepare data for machine input. However, the ADP Committee has not dealt with that problem in this study.

4. As shown in Figure 1, the Committee's educated guess regarding 1970 is that the Agency's ADP personnel will number about 25X1

 and annual ADP costs will be about 25X1

 This could vary considerably due to the impact and effectiveness of advanced ADP technology which remains to be demonstrated. However, we are speaking of something which may approximate 5% of the Agency's total annual manpower and dollar assets. The ADP personnel projection is based on an assumption that total Agency manpower remains the same but as ADP activities increase the trend will be to develop new skills and shift personnel to ADP activities.

5. In return for these large scale expenditures, the Agency should be reaping major additional benefits from ADP by 1970. Projected advantages include the following: in the scientific area there will be flexible large scale analog-digital processing, remote display capabilities, and the most advanced mathematical computing support. Comprehensive intelligence collation and analysis support systems will be further developed. A significant portion

of the Agency's new information retrieval system (CHIVE) will
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be operational. There will be improved WALNUT services in the DD/P, with the integration of source data preparation overseas and high speed telecommunications with Headquarters computer processing planned. At NPIC, an extension of on-line remote terminal facilities will be serving analysts with displays and recall of target information, input and editing of reports, stereo measurement and sophisticated plotting. Computers will be introduced to help with the control and distribution of Agency cables. The security records system will be automated as will be significant elements of the Agency's printing workload. An effective computer driven management information system which reflects human, materiel, and financial resources should be a reality. Inevitably, there will be unforeseen new ADP applications in the Agency during the next five years.

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V. ASSIGNMENT OF ADP ROLES

A. Function Definitions:

1. ADP Management: Planning, coordination, and control of Agency ADP activities.
2. ADP Requirements: Identification of specific data processing needs. The first step in data processing is to define the requirements. Inherent in the function of requirements definition is the thorough study and analysis of existing systems, methods, and procedures; the creation of new functional systems structures; the identification of specific areas of activity which may profitably use ADP techniques; the determination of ADP feasibility; the implementation of improved manual methods; the specification of requirements to be satisfied by computer systems; and the collaborative participation with computer system designers and job programmers to ensure that the computer system designed will satisfy the requirements adequately.
3. ADP Systems Design: The preparation of complete project specifications and detailed logical processing ADP steps. ADP system design is a function normally performed by ADP system specialists having the highest level of technical skills and knowledge of requirements, working in cooperation with the people and components charged with responsibility for mission

accomplishment. The principal objective of ADP system design is to devise techniques and methods for the use of the best available equipment and devices to satisfy the ADP requirements.

4. ADP Job Programming: Writing, debugging and testing the complete sequence of job instructions (computer steps) in machine readable language. Programming relates very closely to system designing for any given job.
5. ADP Operations: This includes the operation of ADP equipment and the scheduling (subject to priorities established by management) and control of the data processed. Equipment operated includes computers and their peripheral or auxiliary hardware, independent punched card machines, etc. Scheduling and control includes the receipt, set-up, scheduling of data to be processed, the distribution of end products, and the physical control of machine language files (e. g., punched card and magnetic tape files) and processing instructions.
6. ADP Systems Programming: Systems programming (versus job programming) shapes the executive system program under which the computer handles all jobs. Systems programming has a direct bearing on job programming standards. Advanced ADP technology places increasing emphasis on the systems programming function.

- B. Clewlów Report: The Clewlów Report specifically identifies assignment of ADP roles as a major problem, both within executive agencies and in the Government as a whole. It points out the complexity of the problem and indicates that there are no firm solutions regarding the organizational disposition of ADP resources.

"The assignment of appropriate roles to the different echelons of management in the Federal Government is of great importance. Some computer applications, particularly those involved in administrative functions, have a great deal in common and conceivably could be subject to greater centralization. On the other hand, the more significant computer applications are integral parts of agency programs; accordingly, each is a unique application and its management is a responsibility of those officials charged with mission accomplishment. The problem then becomes one of improving the effectiveness and the economy of computer utilization, both within an executive agency and in the Government as a whole, without derogating the proper authorities and responsibilities of managers in the line."

C. Executive Directives:

1. Since 1960 the Bureau of the Budget has addressed itself to specific problems relating to the management of automatic data processing in the Government through the issuance of circulars and bulletins. Each one has dealt with a particular subject surfaced to the Bureau of the Budget as a specific problem in ADP management at a particular time. The most recent of these, Bureau of the Budget Circular A-71, deals with responsibilities for the administration and management of automatic data processing activities within the executive

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branch of the Government as well as within the individual departments and agencies. It represents, in a sense, the aggregate of the experience gained from their earlier one-problem-at-a-time approach taken together with the conclusions and recommendations offered in the Clewlow Report. CIA has had a somewhat parallel experience in the evolution of ADP activities as can be seen from the chronology of ADP developments listed earlier in this report. While the Agency has not had a central mechanism to govern ADP developments in the sense that the Bureau of the Budget is now suggesting executive departments and agencies should have, we have had a mechanism for monitoring developments in the form of the Automatic Data Processing Committee, the Automatic Data Processing Staff and its organizational successor, the Office of Computer Services. While these mechanisms may not have been completely effective in terms of exercising management control at the Agency level, they have served a useful coordinating and monitoring purpose. The absence of comparable mechanisms in other agencies probably led to the conclusions and recommendations set forth in the Clewlow Report, now adopted by BOB and endorsed by the President. Even though the Agency may not be in a position

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to say that it has already satisfied all of the provisions of the Bureau of the Budget Circular A-71, it is fair to say that our growth in the automatic data processing business has not been any more proliferate than has anyone else's in or out of Government and that we may have given more attention to responsible Agency management from the over-all point of view than have a great many others.

2. BOB Circular A-71 states: "The heads of all executive departments and establishments are responsible for the administration and management of their automatic data processing activities including:
 - a. "Agency-wide planning, coordination and control of equipment utilization."

Comment: No viable mechanism exists in CIA with the clear mission to develop policy, coordinate planning, or otherwise monitor Agency-wide ADP activities.

- b. "Determination and use of those equipment applications that offer the greatest return in terms of increased effectiveness in mission accomplishment and higher productivity."

Comment: Within CIA, judgment on these matters has been principally a Directorate

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responsibility. To a limited extent but on the basis of the best information available, the Project Review Committee has given Agency-wide consideration to this problem.

- c. "Development of data systems that employ the use of the most advanced design techniques."

Comment: The Agency's reputation and standing with regard to the employment of advanced techniques for information storage and retrieval is very high. It pioneered systems such as WALNUT and INTELLOFAX, and currently is designing CHIVE which incorporates concepts that are in the forefront of the field.

- d. "Merger or integration of data systems irrespective of intra-agency or interagency organizational lines, when cost effectiveness in equipment utilization, data systems management, or program accomplishment can be increased."

Comment: The Agency has not had a practical means of monitoring cost effectiveness in equipment utilization in an over-all Agency context because no

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satisfactory evaluative criteria have been established in the Agency or elsewhere in the Government. However, specific ADP units have been merged within and between Directorates. Recent examples include the merger of ADPD (Comptroller) with OCS and the consolidation of two ADP units at NPIC.

- e. "Determination of automatic data processing equipment requirements."

Comment: The Agency has no effective mechanism for providing central technical review of Agency-wide ADP equipment requirements. However, long range equipment planning has been evident within the Directorates, e.g., Project WALNUT in the DD/P, and OCS plans involving third generation hardware.

- f. "Sharing equipment time and services within the agency, and with other agencies through support of the Government-wide program for sharing exchanges; cooperation in the establishment of service centers and other interagency joint use arrangements."

Comment: The Agency's ADP components share equipment time and services regularly. Files and

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programs are exchanged with NSA, DIA and other members of the Intelligence Community. Computer time is provided to other Government agencies within the limits of security considerations and likewise Agency jobs are sometimes run on other Government computers.

- g. "Consideration of the potential impact of the introduction of ADP equipment on the agency work force and taking such steps as are necessary to alleviate adverse effects to the greatest extent practicable."

Comment: No over-all Agency approach to this problem has been developed, even with respect to determination of the suitability or re-training potential of punched card personnel for computer operations. It should be noted, however, that CIA has long had various man-machine systems of recognized support capability and that Agency personnel, generally, have accepted the fact that machines are useful tools; introduction of computer equipment, therefore, has less negative impact here than in organizations without experience with punched card equipment.

- h. "Participation in Government-wide studies and programs for improving the administration and management of automatic

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data processing activities in the Executive Branch."

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Comment: The Agency participates, within security limitations, in several inter-agency groups which deal with ADP problems. These groups include the Interagency Committee on Automatic Data Processing, the Interagency Group for Research on Information Systems (IGRIS), the USIB Committee on Documentation (CODIB), and the Committee on Scientific and Technical Information (COSATI).

3. The intent of the Directives is to ensure that ADP functions in each Agency will be managed effectively with appropriate care and attention given to cost of mission and effectiveness.

D. Agency Considerations

1. Although security problems and advanced ADP technology have a strong bearing on ADP activities in the Agency, the Committee dealt primarily with the problem of organization and the assignment of ADP roles.
2. Throughout its deliberations, the Committee recognized that ADP is certain to expand and play a larger role in CIA over the next decade. ADP is a highly technical and complex function involving more and more of the Agency's manpower and dollar resources; therefore, it deserves greater attention by Agency management.

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3. While computers alone are not going to provide the total answer to CIA's problem of analog and digital data indigestion, they offer the only practical means of coping with the high data volumes collected in the intelligence process.
4. The majority of the Committee felt that there is a clear distinction between coordination, review and other staff functions which need to be performed on an Agency-wide basis--and directly responsive to top management--and line responsibilities for the conduct of ADP operations. A further distinction was drawn between types of applications. There are those clear-cut production jobs in all Directorates which lend themselves to central processing while other ADP applications are most effective under complete Directorate control.
5. The ADP Committee concluded that the position of Assistant for Data Processing should be established at the DCI level. At the same time it agreed that there is a need for equivalent staff functions to be performed at the Directorate level. Finally, it endorsed the idea of a CIA Computer Center to perform requested services for the Directorates and it developed a concept for approving mission-oriented computer facilities.

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E. How to Organize ADP in CIA

1. The Committee considered several alternative approaches to organizing ADP in CIA, ranging in extreme from full centralization of all ADP resources in the Agency under the command structure of one organizational component to total decentralization with ADP units in as many components as may feel the need to have them. Other alternatives between the two extremes were also discussed in varying degrees of depth. The consensus of the majority of the members, however, seems to be that in the absence of better evidence than is presently available (or could in the time available, be produced by the Committee) no one of these alternatives could be recommended more highly than another. All rejected total decentralization. One member supports total centralization. Two members felt that on-line applications involving complex interplay between manual and computer based reference facilities, as well as certain developmental activities, and certain highly sensitive applications, can be most effectively managed under complete Directorate control. The other two members believe it feasible to have selected decentralized facilities serving the command structure of the environment in which they are located while preserving centralized technical management control over equipment and ADP personnel without doing total violence to either principle.

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2. A part of the difficulty is the lack of complete unanimity among the members about what is, or should be, meant by such terms as "mission-oriented" and "ADP Center." "Mission-oriented" can be interpreted to mean "devoted exclusively to and an integral part of the data processing continuum of a particular function," such as the RID index and document retrieval system or the Special Register of OCR; or it can be interpreted to mean "devoted exclusively to the satisfaction of the data processing requirements of a particular organization component," such as the Clandestine Services or the entire Office of Central Reference. The term "center" can be interpreted to mean "equipment, equipment operators, and system programmers"; it can be interpreted to include equipment, equipment operators, system programmers, job programmers, system analysts, and system designers; it can be interpreted to include varying combinations of these or other categories of technological expertise; or, to further complicate the issue, it can be interpreted to include kinds of service rendered in addition to the several combinations of expertise available. When the two terms are combined to describe a "mission-oriented center," the potential for misunderstanding, or lack of understanding, is infinite. In an atmosphere of terminology as imprecise as this, the Committee was unable to obtain unqualified acceptance of a premise that the

preservation of the status quo represents a condition or set of conditions which should or should not continue indefinitely to be tolerated.

3. The Committee recognized that four major ADP facilities now exist in OCS, RID, NPIC, and OCR. The first three are computer based and the fourth is punch-card based. Each of the latter three considers itself to be a "mission-oriented center," but the consensus of the Committee is that at least two, and perhaps all three, represent differing applications of the two terms individually and in combination. The individual Directorate philosophies can be seen in the attachments to this report.
4. The course which most closely expresses the majority view is presented below. The Committee notes, however, that the validity of settling on any one course is suspect because criteria to measure effectiveness of mission accomplishment and security considerations in balance against cost of one or another of the several possible alternatives have not been established to everyone's satisfaction. The development of such criteria, therefore, is a major task to be undertaken to permit informed management decisions to be made. With this basic point in mind, the course suggested is to:

- a. Establish a staff in the Office of the DCI to assist him in providing Agency-wide policy, coordination, and management of ADP plans, activities, and operations. This staff should consist of an Assistant For Data Processing and a group qualified to recommend to the DCI suitable courses of action with respect to ADP in the Agency. Its responsibilities should include the following:
 1. Advise and represent the DCI on matters relating to ADP in CIA.
 2. Serve as the focal point in CIA for the development and enunciation of policies, criteria, and standards governing the selection, acquisition, and application of Agency ADP resources.
 3. Recommend new ways to exploit ADP capabilities in support of substantive, operational and administrative Agency interests.
 4. Plan for the most effective development of Agency ADP data systems, and for the employment of the most advanced ADP techniques.
 5. Review Directorate ADP plans to ensure their consistency with the over-all Agency plan.

6. Define training requirements; develop an educational and training program to promote better understanding of ADP and broaden the general background among Agency managers at all levels; provide for the development of a suitable inhouse training capability as required; and plan for the systematic participation by selected Agency employees in suitable internal and external training programs.
- b. Establish a comparable capability in each Directorate to coordinate ADP activities. Duties would include: defining the Directorate's data processing requirements and serving as a focal point for review and coordination of Directorate and inter-Directorate ADP interests.
- c. Accept and recognize three demonstrably needed computing centers and one major punched card facility in CIA at this time. The principal one--the CIA Computing Center, offers centralized services to all Directorates. The two computing centers, in NPIC and in DD/P, and the OCR Punched Card Center support their respective line organizations. New centers are to be established when the need arises and if they can be justified. Recommendations for establishing

new centers would be reviewed by the Assistant for Data Processing. Conversely, if conditions indicate that fewer centers are desirable, the Assistant for Data Processing would have the responsibility to recommend that action to the DCI. A suggested list of functions for the Assistant for Data Processing is contained in Attachment A.

5. The DD/S&T member of the Committee, is not in 25X1 agreement with the above. He feels that important economic and technical matters were given little, if any, consideration. Therefore, he has prepared his separate views on organizing ADP in the Agency. These are contained in Attachment E.

VI. CONCLUSIONS

1. ADP activity in CIA is expanding rapidly and is certain to have a long-range impact on the effectiveness with which the Agency and the Intelligence Community manage and use their substantive and administrative data.
2. ADP per se is a highly specialized function. However, its utilization as a management tool must be fully explored. ADP is closely tied to technological development and must therefore be staffed with professionally qualified personnel if optimum results are to be attained. It requires a concerted effort to educate and broaden the general background of Agency managers at all levels in the potential and capability of modern technology.
3. ADP activities in CIA are partially dispersed and there is a great and continuing need for increased communication and education among Directorates on ADP matters.
4. The focus of ADP management should be placed at the top of the organization to enable the Director to meet and fulfill his responsibilities under existing executive directives.
5. The ADP security problems which confront CIA are not dealt with in Government-wide regulations, BOB guidelines or proposed legislation.

6. The Office of Computer Services in the DD/S&T, in addition to the support of its Directorate, should be charged with performing those computer services requested by the various components of the Agency.
7. New computer centers should be authorized only when justified and approved by the Director.

VII. RECOMMENDATIONS

1. The growing importance of ADP in CIA and in the intelligence community should be recognized and the DCI should appoint an Assistant whose principal responsibility is to advise and represent him on matters relating to ADP.
2. The Assistant for Data Processing should be charged with advising the DCI on Agency progress in compliance with Executive Directives on ADP.
3. The Assistant for Data Processing and a staff of technical personnel should be attached to the Director's Office to advise him on matters relating to ADP and to recommend suitable action.
4. Each Deputy Director should appoint an ADP Coordinator to define his Directorate requirements for ADP support and ensure their coordination with Agency plans.
5. The Executive Director's Panel 375 and the CIA ADP Committee should be dissolved with the establishment of the position of Assistant for Data Processing in the Director's Office, and Directorate ADP coordinators to meet at his call.